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BUREAU OF SHIPS GROUP

TECHNICAL INSPECTION REPORT.

367425

Classification (Cancelled) (Changed to **CONFIDENTIAL**)
By Authority of Joint Chiefs of Staff Action 9E-11 April 1947
John B. Gage, Capt Date 24 April 51
AFSNP

⑥ OPERATION CROSSROADS.
U.S.S. BARROW (APA 61).
TEST BAKER - 07.8

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Director
Defense Atomic Support Agency
Washington, D. C. 20301

⑪ 1947, ⑫ 38p.
⑭ XRD-119

OPERATION CROSSROADS

DIRECTOR OF SHIP MATERIAL

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1 JAN 1965

BUREAU OF SHIPS GROUP
TECHNICAL INSPECTION REPORT

CONFIDENTIAL

Classification (~~Secret~~) (Changed to CONFIDENTIAL)
By Authority of JOINT CHIEFS OF STAFF ACTION OF 11 April 1954
By John R. Beggs, Capt Date 24 April 54
AFSND

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Washington, D. C. 20301

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F.X. Forest,
Captain, U.S.N.

USS BARROW (APA61)

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SECRET

USS BARROW (APA61)

U.S.S. BARROW (APA 61)

SHIP CHARACTERISTICS

Building Yard: Consolidated Steel Corp.; Wilmington,
California.

Commissioned: 28 September 1944.

HULL

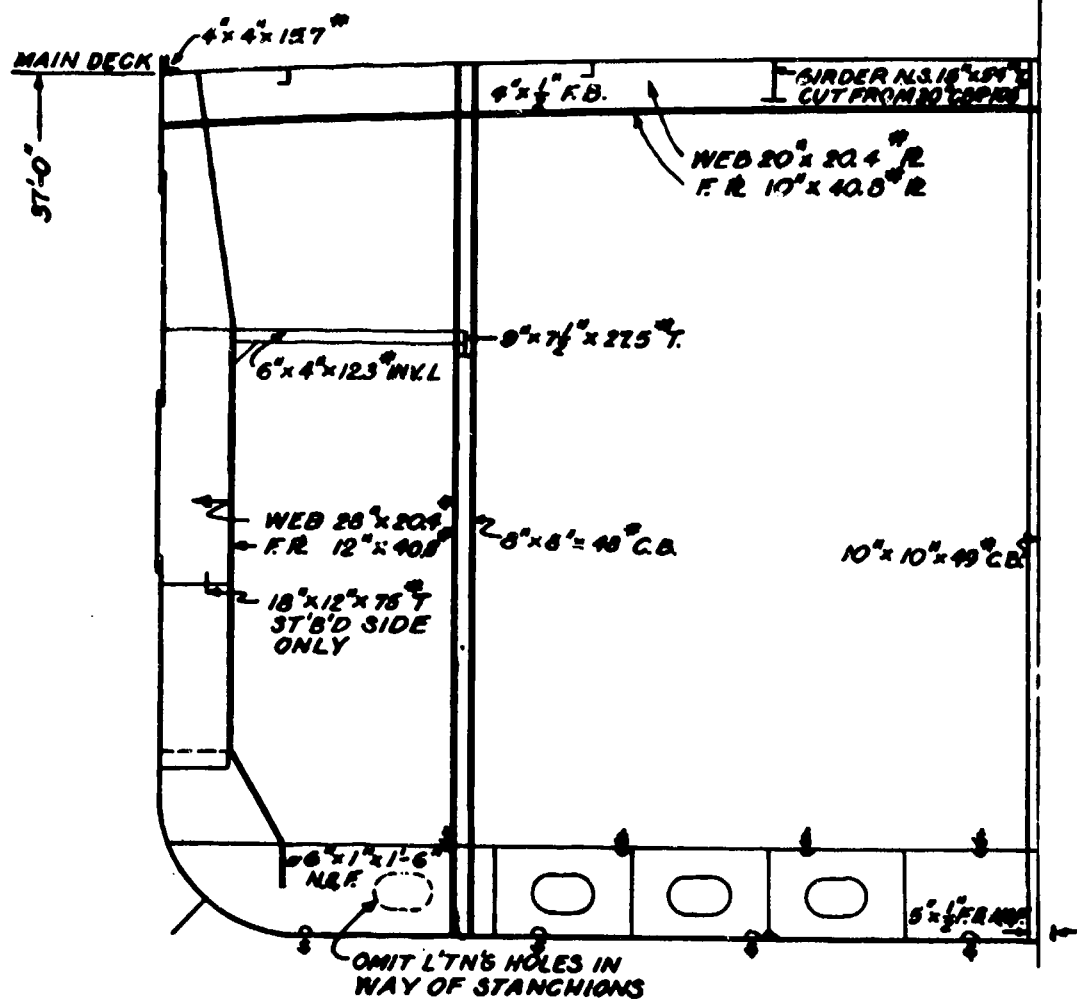
Length Overall: 426 feet 0 inches.
Length on Waterline: 400 feet 0 inches.
Beam (extreme): 58 feet 0 inches.
Depth (molded to upper deck): 37 feet 0 inches.
Drafts at time of test: Fwd. 8 feet 9 inches.
Aft. 18 feet 3 inches.
Limiting displacement: 7,080 tons.
Displacement at time of test: 5,878 tons.

MAIN PROPULSION PLANT

Main Engines: Two sets of Westinghouse steam turbines, directly connected to Westinghouse main generators. Two main shaft motors.
Main Condensers: Two are installed in ship.
Boilers: Two Babcock and Wilcox boilers are installed in ship 450 psi gauge - 750° F.
Propellers: Two are installed in ship.
Main Shafts: Two are installed in ship.
Ships Service Generators: Five turbo Gen's are installed. Two - 250 KW. - 450 V.- A.C., One - 150 KW. - 450 V. A.C., and Two 100 KW. - 120/240 V. - D.C. units.

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USS BARROW (APA61)



FRAME 76 LOOKING AFT

MIDSHIP SECTION

TEST B

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U.S.S. BARROW (APA 61)

TECHNICAL INSPECTION REPORT

OVERALL SUMMARY

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

There was no flooding, hence no change in drafts or list.

- (b) Structural damage.

HULL

There is no structural damage.

MACHINERY

No comment.

ELECTRICAL

No structural damage observed which affected electrical equipment.

- (c) Other damage.

HULL

Not observed.

MACHINERY

None.

ELECTRICAL

No electrical damage was observed as a result of test

B.

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USS BARROW (APA61)

II. Forces Evidenced and Effects Noted.

(a) Heat.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of heat.

(b) Fires and explosions.

HULL

None.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of fires or explosions.

(c) Shock.

HULL

None.

MACHINERY

No evidence.

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USS BARROW (APA61)

ELECTRICAL

There was no evidence of shock on electrical equipment.

(d) Pressure.

HULL

Only upper deck cargo hatch boards were displaced. One board of the after hatch and 60 per cent of the boards of the forward hatch have fallen to the main deck level. Although there is little indication other than the displacement of the hatch boards, the ship probably took onboard a large amount of water.

MACHINERY

No evidence.

ELECTRICAL

There was no evidence of pressure on electrical equipment.

(e) Effects peculiar to the atomic bomb.

HULL

The ship took on board some radioactive water, and has various degrees of radioactivity throughout the ship which limited the time for inspections.

MACHINERY

None, except radioactivity.

ELECTRICAL

There were no effects noted that are considered peculiar to the atomic bomb other than radioactivity.

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USS BARROW (APA61)

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

HULL

No units could be run, but in the opinion of the inspecting party, there should be no change in operability as a result of the test.

MACHINERY

None, as far as can be determined by visual inspection. No machinery on this vessel was operated after test B because of radioactivity, which was high when the ship was inspected 15 days after the test.

ELECTRICAL

Although operability tests were not made, no evidence could be found that electrical equipment or ship control were affected by this test.

(b) Effect on gunnery and fire control.

HULL

No apparent damage to equipment.

MACHINERY

No comment.

ELECTRICAL

Gunnery and fire control were unaffected electrically.

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USS BARFOW (APA61)

(c) Effect on watertight integrity and stability.

HULL

None.

MACHINERY

No comment.

ELECTRICAL

None.

(d) Effect on personnel and habitability.

HULL

No effect other than radiological hazards.

MACHINERY

None, except for possible effects of radioactivity.

ELECTRICAL

It is considered the only effect on personnel and habitability would have been that due to radioactivity.

(e) Effect on fighting efficiency.

HULL

No effect other than radiological hazards.

MACHINERY

None, except for possible effects of radioactivity.
As the machinery was fully operable, the vessel might have been able to steam out of the contaminated area without being seriously affected.

SECRET

USS BARROW (APA61)

ELECTRICAL

There was no effect on the fighting efficiency of this vessel as a result of this test from electrical failures. It is considered that except for personnel casualties due to radioactivity this vessel fighting efficiency would have been unimpaired.

IV. Summary of Observers' Impressions and Conclusions.

HULL

There is no apparent effect on the ship either structurally or in displacement of fittings or equipment within compartments. Except for radiological considerations, the ship was subjected to no worse conditions than would be met in heavy seas.

MACHINERY

The BARROW was outside the effective range of physical damage from the explosion during test B.

ELECTRICAL

The distance of this vessel from the blast was too great for electrical damage to occur.

V. Preliminary Recommendations.

HULL

Securing arrangements for upper deck cargo hatch boards should be more positive.

MACHINERY

None.

ELECTRICAL

None.

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USS BARROW (APA61)

TECHNICAL INSPECTION REPORT

SECTION I - HULL

GENERAL SUMMARY OF HULL DAMAGE

I. Target Condition After Test.

- (a) Drafts after test; list; general areas of flooding, sources.

list. There was no flooding, hence no change in drafts or

- (b) Structural damage.

There is no structural damage.

- (c) Other damage.

Not observed.

II. Forces Evidenced and Effects Noted.

- (a) Heat.

None.

- (b) Fires and explosion.

None.

- (c) Shock.

None.

- (d) Pressure.

Only upper deck cargo hatch boards were displaced.
One board of the after hatch and 60 percent of the boards of the for-

SECRET

U. S. S. BARROW (APA61)

ward hatch have fallen to the main deck level. Although there is little indication other than the displacement of the hatch boards, the ship probably took onboard a large amount of water.

(e) Effects peculiar to the Atomic Bomb.

The ship took onboard some radioactive water, and has various degrees of radioactivity throughout the ship which limited the time for inspections. The inclinometer in the engine room indicated that the vessel rolled 13 degrees to starboard and 21 degrees to port.

III. Results of Test on Target.

(a) Effect on machinery, electrical, and ship control.

No units could be run, but in the opinion of the inspecting party, there should be no change in operability as a result of the test.

(b) Effect on gunnery and fire control.

No apparent damage to equipment.

(c) Effect on watertight integrity and stability.

None.

(d) Effect on personnel and habitability.

No effect other than radiological hazards.

(e) Effect on fighting efficiency.

No effect other than radiological hazards.

IV. Summary of Observers Impressions and Conclusions.

There is no apparent effect on the ship either structurally or in displacement of fittings or equipment within compartments.

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U. S. S. BARROW (APA61)

Except for radiological considerations, the ship was subjected to no worse conditions than would be met in heavy seas.

V. Preliminary Recommendations.

Securing arrangements for upper deck cargo hatch boards should be more positive.

VI. Instructions for Loading the Vessel Specified the Following:

ITEM

Fuel oil.	Full load
Diesel oil.	Full load
Ammunition	100%
Potable and reserve feed water	Full load
Salt water ballast	None.

Details of the actual quantities of the various items aboard are included in Report 7, Stability Inspection Report, submitted by the ship's force in accordance with "Instructions to Target Vessels for Tests and Observations by Ship's Force" issued by the Director of Ships Material. This report is available for inspection in the Bureau of Ships Crossroads Files.

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U. S. S. BARROW (APA61)

DETAILED DESCRIPTION OF HULL DAMAGE

A. General Description of Hull Damage.

There is no structural damage to the vessel.

Upper deck cargo hatch boards have been displaced. In addition, the movie screen and screen frame have been broken loose and distorted.

The light damage was probably caused by the fall of radioactive water which further restricted the inspection of the vessel.

General views of the exterior of the vessel are shown on pages 1 to 10, inclusive.

B. Superstructure.

No damage.

C. Turrets, Guns and Directors.

No damage.

D. Torpedo Mounts, Depth Charge (ar.

Not applicable.

E. Weather Deck.

Only upper deck cargo hatch boards were displaced. 60 percent of the forward cargo hatch boards were displaced and fell to the main deck level. In the after cargo hatch one board was displaced and fell to the main deck.

F. Exterior Hull.

No damage.

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U. S. S. BARROW (APA61)

G. Interior Compartments (Above Waterline).

No damage.

H. Armor Decks and Miscellaneous Armor.

Not applicable.

I. Interior Compartments (Below Waterline).

No damage.

J. Underwater Hull.

No damage.

K. Tanks.

No damage.

L. Flooding.

None.

M. Ventilation.

No damage.

N. Ship Control.

No damage.

O. Fire Control.

No damage.

P. Ammunition Behavior.

No damage.

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U. S. S. BARR OW (APA61)

Q. Ammunition Handling.

No damage.

R. Strength.

No damage.

S. Miscellaneous.

No comment.

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U. S. S. BARROW (APA61)

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TECHNICAL INSPECTION REPORT

SECTION II - MACHINERY

GENERAL SUMMARY OF MACHINERY DAMAGE

I. Target Condition after test.

(a) Drafts after test; list; general areas of flooding, sources.

No data taken by machinery group.

(b) Structural damage.

No comment.

(c) Other damage.

None.

II. Forces evidenced and effects noted.

(a) Heat.

No evidence.

(b) Fires and explosions.

No evidence.

(c) Shock.

No evidence.

(d) Pressure.

No evidence.

(e) Effects apparently peculiar to the atom bomb.

None, except radioactivity.

SECRET

USS BARROW (APA61)

III. Effects of Damage.

(a) Effect on machinery, and ship control.

None, as far as can be determined by visual inspection.

No machinery on this vessel was operated after Test B, because of radioactivity, which was high when the ship was inspected 15 days after the test.

(b) Effect on gunnery and fire control.

No comment.

(c) Effect on water-tight integrity and stability.

No comment.

(d) Effect on personnel and habitability.

None, except for possible effects of radioactivity.

(e) Total effect on fighting efficiency.

None, except for possible effects of radioactivity. As the machinery was fully operable, the vessel might have been able to steam out of the contaminated area without being seriously affected.

IV. General Summary.

The BARROW was outside the effective range of physical damage from the explosion during Test B.

V. Preliminary Recommendations.

None.

SECRET

USS BARROW (APA61)

DETAILED DESCRIPTION OF MACHINERY DAMAGE

A. General Description of Machinery Damage.

(a) Overall condition.

The overall condition of the machinery was unchanged by Test B as far as can be determined by visual inspection.

(b) Areas of major damage.

None.

(c) Primary cause of damage in each area of major damage.

Not Applicable.

(d) Effect of target test on overall operation of machinery plant.

The test had no effect on operation of machinery, as far as can be determined by visual inspection. No machinery on this vessel was operated after Test B.

B. Boilers.

No apparent damage.

C. Blowers, forced draft.

No apparent damage.

D. Fuel Oil Equipment.

No apparent damage.

E. Boiler Feedwater Equipment.

No apparent damage.

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USS BARROW (APA61)

F. Main Propulsion Machinery.

No apparent damage.

G. Reduction Gears.

Not Applicable.

H. Shafting and Bearings.

No apparent damage.

I. Lubrication System.

No apparent damage.

J. Condensers and Air Ejectors.

No apparent damage.

K. Pumps.

No apparent damage.

L. Auxiliary Generators (Turbine and Gears).

No apparent damage.

M. Propellers.

Not inspected. The propellers were not visible from the surface of the water. There is no reason to believe that they were damaged.

N. Distilling Plant.

No apparent damage.

O. Refrigeration Plant.

No apparent damage.

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USS BARROW (APA61)

P. Winches, Windlasses, and Capstans.

No apparent damage.

Q. Steering Engine.

No apparent damage.

R. Elevators, Ammunition Hoists, Etc..

No apparent damage.

S. Ventilation (Machinery).

No apparent damage.

T. Compressed Air Plant.

No apparent damage.

U. Diesels (Generators and Boats).

No apparent damage.

V. Piping Systems.

No apparent damage.

W. Miscellaneous.

No apparent damage.

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USS BARROW (APA61)

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TECHNICAL INSPECTION REPORT

SECTION III - ELECTRICAL

GENERAL SUMMARY OF ELECTRICAL DAMAGE

I. Target Condition After Test.

(a) Drafts after test; list; general areas of flooding, sources.

Drafts or list were not observed. There was no flooding.

(b) Structural damage.

No structural damage observed which affected electrical equipment.

(c) Other damage.

No electrical damage was observed as a result of Test B.

II. Forces Evidenced and Effects Noted.

(a) Heat.

There was no evidence of heat.

(b) Fires and explosions.

There was no evidence of fires or explosions.

(c) Shock.

There was no evidence of shock on electrical equipment.

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USS BARROW (APA61)

(d) Pressure.

There was no evidence of pressure on electrical equipment.

(e) Any effects apparently peculiar to the atom bomb.

There were no effects noted that are considered peculiar to the atomic bomb other than radioactivity.

III. Effects of Damage.

(a) Effect on propulsion and ship control.

Although operability test were not made, no evidence could be found that electrical equipment or ship control were affected by this test.

(b) Effect on gunnery and fire control.

Gunnery and fire control were unaffected electrically.

(c) Effect on water-tight integrity and stability.

None.

(d) Effect on personnel and habitability.

It is considered the only effect on personnel and habitability would have been that due to radioactivity.

(e) Total effect on fighting efficiency.

There was no effect on the fighting efficiency of this vessel as a result of this test from electrical failures. It is considered that except for personnel casualties due to radioactivity this vessels fighting efficiency would have been unimpaired.

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USS BARROW (APA61)

IV. General Summary of Observers' Impressions and Conclusions.

The distance of this vessel from the blast was too great for electrical damage to occur.

V. Any Preliminary General or Specific Recommendations of the Inspection Group.

None.

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USS BARROW (APA61)

DETAILED DESCRIPTION OF ELECTRICAL DAMAGE

A. General Description of Electrical Damage.

(a) Overall condition.

This vessel received no damage to electrical equipment as a result of Test B.

(b) Areas of major damage.

None.

(c) Primary causes of damage in each area of major damage.

There was no electrical damage.

(d) Effect of target test on overall operation of electric plant.

Although operability tests were not conducted, the overall operation of the electric plant was apparently unaffected by this test.

(e) Types of equipment most affected.

None.

B. Electric Propulsion Rotating Equipment.

No damage.

C. Electric Propulsion Control Equipment.

No damage.

D. Generators - Ships Service.

No damage.

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USS BARROW (APA61)

E. Generators - Emergency.

No damage.

F. Switchboards, Distribution and Transfer Panels.

No damage.

G. Wiring, Wiring Equipment and Wireways.

No damage.

H. Transformers.

No damage.

I. Submarine Propelling Batteries.

Not Applicable.

J. Portable Batteries.

No damage.

K. Motors, Motor Generator Sets and Motor Controllers.

No damage.

L. Lighting Equipment.

No damage.

M. Searchlights.

No damage.

N. Degaussing Equipment.

No damage.

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USS BARROW (APA61)

O. Gyro Compass Equipment.

No damage.

P. Sound Powered Telephones.

No damage.

Q. Ship's Service Telephones.

Not Applicable.

P. Announcing Systems.

No damage.

S. Telegraphs.

No damage.

T. Indicating Systems.

No damage.

U. I.C. and A.C.O. Switchboards.

No damage.

V. F.C. Switchboard.

No damage.

W. Miscellaneous.

No comment.

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USS BARROW (APA61)

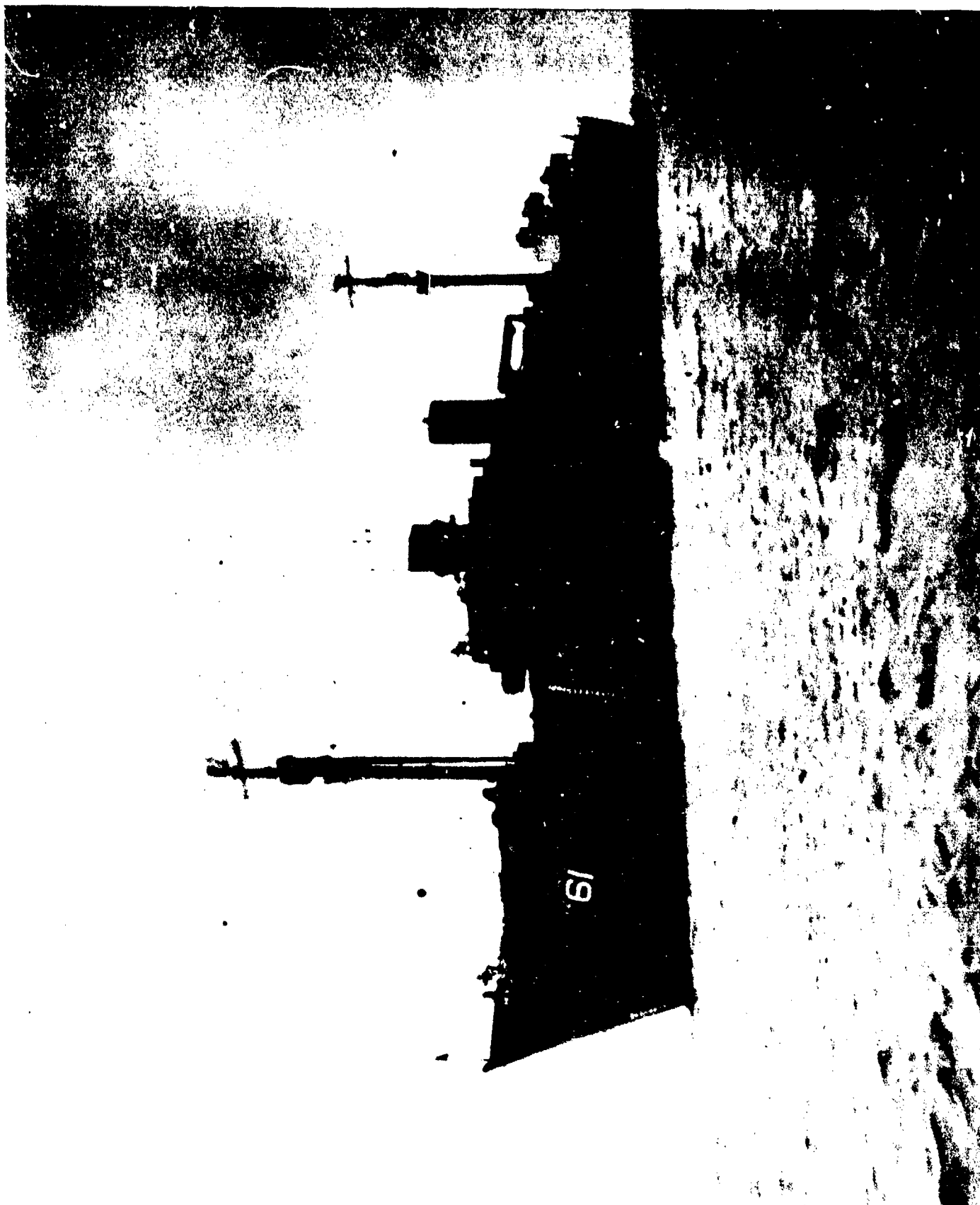
SECTION IV

PHOTOGRAPHS

TEST BAKER

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USS BARROW (APA61)



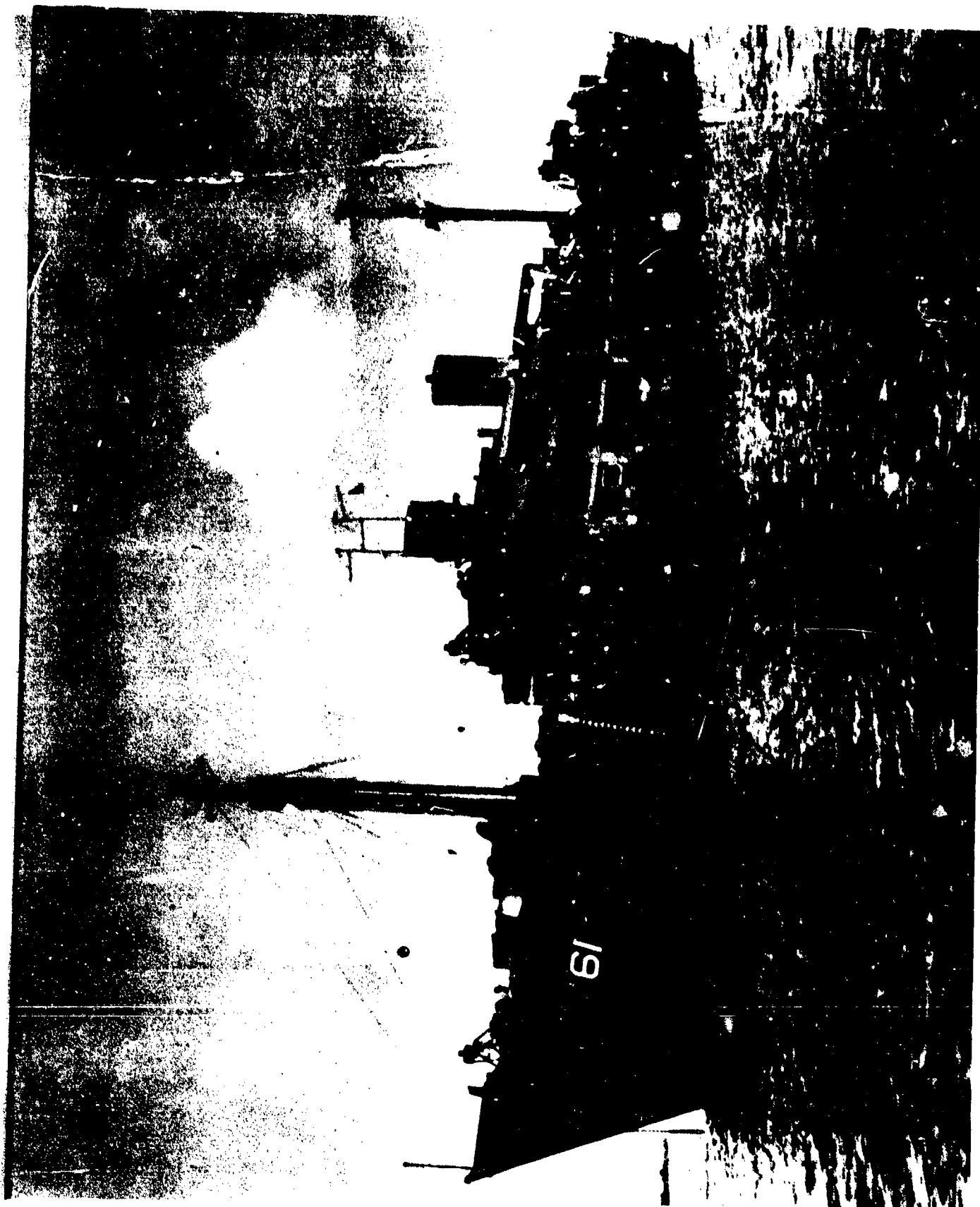
BB-CR-227-513-107. View off port bow before Test B.

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AB-CR-227-243-12. View off port bow after Test B.

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BB-CR-227-513-109. View off port quarter before Test B.

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AB-CR-227-243-14. View off port quarter after Test B.

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USS BARROC (APA61)

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BB-CR-227-513-102. View off starboard quarter before Test B.

SECRET

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USS BARROW (APA61)

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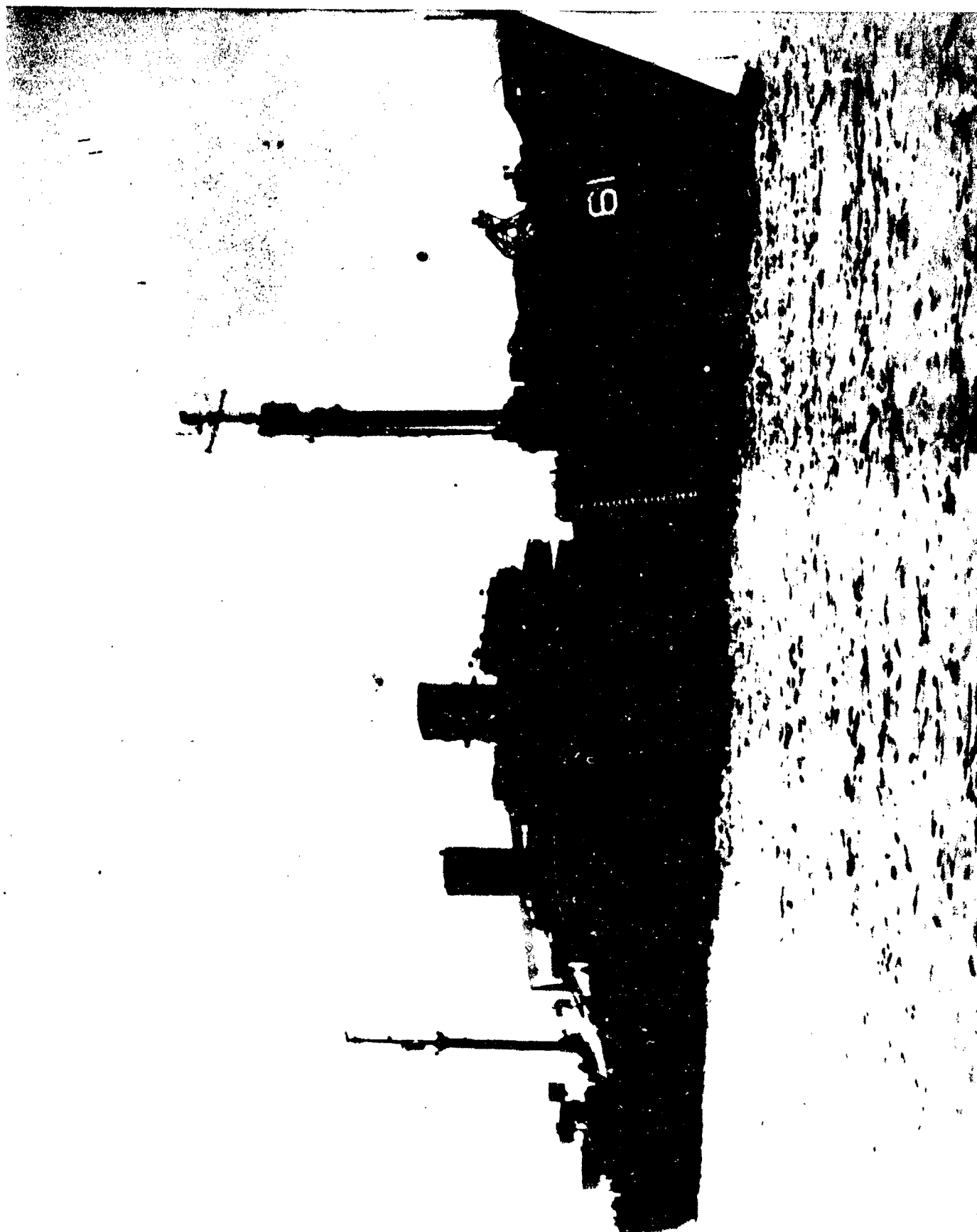
AB-CR-227-243-16. View off starboard quarter after Test B.

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AB-CR-227-243-10. View off starboard bow after Test B.

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BB-CR-227-513-105. View off starboard bow before Test B.

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APPENDIX

COMMANDING OFFICERS REPORT

TEST BAKER

SECRET

USS BARROW (APA61)

COMMANDING OFFICERS REPORT

REPORT # 5

SECTION - I

The Commanding Officer, Engineering Officer, First Lieutenant and Executive Officer boarded the ship for about one hour on 9 August 1946. Parties were split three ways for below deck inspection and BuShips Representative later followed same routes with ships petty officers accompanying. The Executive Officer with BuOrd Representatives inspected ordnance material.

On the basis of the above hurried inspection the following observations were made:

- (a) No apparent damage to hull or machinery.
- (b) No apparent damage to Ordnance Material.
- (c) No apparent damage to Navigational equipment.
- (d) No apparent damage to Electronic equipment.
- (e) Half the hatch boards had fallen to main deck at #1 hold but they were not bent or distorted. No. 2 hatch was intact except for one hatch board.
- (f) Rigging, signal halyards, etc., were intact. The emergency antennae rigged after Test A was down.
- (g) Special telescopic scratch gauges installed in Engine room prior to test B, showed a maximum compression of 1 inch and returned to normal. Gauges on main deck at #1 hatch showed upper deck had been compressed one inch and returned to normal.
- (h) Inclinometers in Engine room showed maximum roll to Stbd. 13°, to port 21°.
- (i) No apparent change in list or trim.

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USS BARROW (APA-61)

INITIALS



Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

TRC

18 April 1997

MEMORANDUM FOR DEFENSE TECHNICAL INFORMATION CENTER
ATTENTION: OMI/Mr. William Bush (Security)

SUBJECT: Declassification of Reports

The Defense Special Weapons Agency has declassified the following reports:

✓AD-366588 4	XRD-203-Section 12✓
AD-366589 ✓	XRD-200-Section 9
AD-366590 ✓	XRD-204-Section 13
AD-366591 ✓	XRD-183
✓AD-366586 X	XRD-201-Section 10✓
✓AD-367487 X	XRD-131-Volume 2✓
✓AD-367516 4	XRD- 3 143✓
✓AD-367493 X	XRD-142✓
AD-801410L✓	XRD-138
AD-376831L✓	XRD-83
AD-366759 ✓	XRD-80
✓AD-376830L X	XRD-79✓
✓AD-376828L X	XRD-76✓
✓AD-367464 X	XRD-106✓
AD-801404L✓	XRD-105-Volume 1
✓AD-367459 X	XRD-100✓

TRC

18 April 1997

Subject: Declassification of Reports

✓AD-367491 ✕	XRD-134-Volume 2 ✓
✓AD-367479 ✕	XRD-123 ✓
✓AD-367478 ✕	XRD-122 ✓
✓AD-367481 ✕	XRD-125 ✓
AD-367500 ✓	XRD-159-Volume 2 <i>reinst</i>
✓AD-367499 ✕	XRD-160-Volume 3 ✓
✓AD-367498 ✕	XRD-161-Volume 4 ✓
AD-367512 ✓	XRD-147
AD-367511 ✓	XRD-148
✓AD-367465 ✕	XRD-107 ✓
AD-366733 ✓	XRD-43
✓AD-367477 ✕	XRD-121 ✓
✓AD-367476 ✕	XRD-120 ✓
✓AD-367467 ✕	XRD-109-Volume 1 ✓
AD-367475 ✕	XRD-119 ✓
AD-367474 ✕	XRD-118 ✓
AD-367473 ✕	XRD-117 ✓
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AD-367471 ✕	XRD-115 ✓
AD-367466 ✕	XRD-108 ✓
AD-801405L ✓	XRD-113
AD-367470 ✕	XRD-112 ✓
AD-367469 ✕	XRD-111 ✓

TRC

18 April 1997

Subject: Declassification of Reports

AD-801406L ✓ XRD-114.

In addition, all of the cited reports are now **approved for public release; distribution statement "A" now applies.**

Arldith Jarrett
ARDITH JARRETT
Chief, Technical Resource Center